

DOCKET NO.: DIBIS-0002US.P4 (Counsel Docket No. 10448)

PATENT

## REMARKS

Applicants wish to thank the Examiner for discussing the claims and the Muddiman references during the July 12, 2006 interview. Applicants acknowledge the receipt of Form PTOL-413.

Claims 1, 2, 4-10, 14, 17 and 28-44 are pending in the current case. Claim 3 has been canceled and claims 45 and 46 are new. Claims 1, 28-31 and 42-44 have been amended. The claim amendments and the new claims add no new matter.

Claims 1 and 31 have been amended to recite that both the first primer member and second primer member of a primer pair target conserved regions of a nucleic acid encoding a protein. Support can be found throughout the specification, including page 8, lines 1-15; and page 11 line 1 to page 12 line 10. Claims 1 and 31 have also been amended to recite that the sample base compositions are compared to a collection of 8 or more previously obtained base compositions. Support for these amendments can be found, for example, in tables 4a through 7 showing, in one example 19 bioagents. Figure 14, also shows a three-dimensional graph of base compositions for 8 species of bioagents. New claims 45 and 46 are similarly supported by the specification. Further amendments to claims 1 and 31 are merely rearrangements of the claim language to more precisely state the elements therein. Claims 28-30 and 42-44 have been amended to replace the term comparison with the term identifying pursuant to the rearrangements of claims 1 and 31.

## Priority

Examiner is stating that it is unclear where in the parent applications there is support for determining the bioagent composition of an air sample as recited in claim 3. Claim 3 has been canceled, but Applicants note that the broad claim 1 still comprises air samples. So, the subject matter is not removed via estoppel.

## Claim Rejections

I. Rejections Under 35 USC § 102(b):A. Muddiman *et al* (1997) 69:1543-1549:

Claims 1, 2, 7, 14, 17, 29 and 30 have been rejected under 35 USC § 102(b) as being anticipated by Muddiman *et al* (1997) 69:1543-1549, evidenced by Muddiman *et al*

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(1996) 68:3705-3712 (hereinafter, respectively, "Muddiman 1" and "Muddiman 2"). Claim 1 has been amended to recite that the first and second members of a primer set bind conserved regions within a single gene. Claim 1 has also been amended to recite comparisons of base compositions to a composition of 8 or more bioagents. Muddiman 1 or 2 teaches neither of these elements.

Applicants respectfully direct the Examiner's attention to page 3708, column 1 paragraph 2 of the Muddiman 2 reference. Here Muddiman states that PCR primers were designed to amplify the spacer region between the 16S and the 23S rRNA genes. Figure 1 and column 2 of Muddiman 2 are consistent with priming and amplifying this non-gene region. Moreover, Muddiman 1 does not remedy this, but rather relies upon the amplification of the spacer region for generating PCR amplicons of the listed *bacillus* species. Current claim 1 has the element that the primer pairs hybridize with a nucleic acid that encodes a ribosomal RNA. This is not the spacer region between two genes, as taught by Muddiman, and as such Muddiman neither teaches this element nor anticipates claim 1. Claims 7, 14, 17, 29 and 30 depend on claim 1, and therefore include all of the limitations thereof. These dependent claims are not anticipated by Muddiman. Applicant's respectfully request that the Examiner withdraw the rejection of these claims under 35 USC § 102(b).

II Rejections Under 35 USC § 103(a):

A. Muddiman et al. (1996) 68:3705-3712 light of Koster (WO 98/20166):

Examiner alleges that claims 1, 2, 6-8, 14, 17 and 28 are obvious over Muddiman et al. (1996) 68:3705-3712 light of Koster (WO 98/20166). Muddiman is relied upon for teaching primers for generating an amplicon for molecular mass determination using FT-ICR spectrometry with ESI. The samples are from an environment as defined in column 1, page 3707 of Muddiman. The samples are all *bacillus*, and Muddiman identifies *b. subtilis* separate from the other *bacillus* organisms. Koster is relied on for teaching base composition determination.

As stated above, Muddiman does not teach the primers of the current invention. Neither does Muddiman teach the identification of 8 or more bioagents. Koster does not cure this defect. Moreover, Koster does not teach the identification of base compositions. On page 105 and in table 2, Koster is showing the known base compositions

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for the oligos synthesized for use in the example. In this example Koster is determining whether the addition of modified bases will assist with mass resolution between oligos. For example, see page 108 wherein Koster states that the single strands of a 99-mer were not resolved until modified nucleobases were added. Koster does not determine base composition.

Accordingly, both Muddiman and Koster are deficient; failing to teach all of the elements of the current claims. Moreover, these deficiencies are not made up for by the combination of these references. In addition, Applicants hereby incorporate the enclosed declaration under 37 C.F.R. 1.132 by Dr. Steven Buchsbaum, which was submitted in the parent case 10/156,608, noting the unexpected success of the technology. Applicants respectfully request that the rejection of claims 1, 2, 6-8, 14, 17 and 28 is withdrawn.

B. Bergeron (U.S. Patent 6,001,564) in light of Koster (WO 98/20166):

Examiner alleges that claims 1-2, 8-9, 14, 17, 29, 31-32, 35-38, 41 and 43 are obvious over Bergeron (U.S. Patent 6,001,564) in light of Koster (WO 98/20166). Bergeron is relied on for selecting primers to a variety of bacterial species and a variety of genes, producing amplicons and determining their molecular masses. The Bergeron samples are recited as being from food stuff. Koster is relied on as above.

It is notable that in the Bergeron reference at Example 10, column 13 beginning at line 35 it is stated that the Bergeron requires the use of more than one set of primers when the goal is to "detect simultaneously several species of bacterial pathogen." This teaches away from the current claim 1 and claim 31 wherein a single primer pair is sufficient to detect more than one bioagent. Koster does not correct for this defect. Moreover, neither Bergeron nor Koster teach the comparison of a measured base composition from a sample to a reference of 8 or more base compositions for identifying the bioagent composition of a sample. Applicants respectfully assert that Bergeron in view of Koster fails to teach all of the elements of the current independent claims 1 and 31, as well as dependent claims 2, 8-9, 14, 17, 29, 32, 35-38, 41 and 43. In addition, Applicants hereby incorporate the enclosed declaration under 37 C.F.R. 1.132 by Dr. Steven Buchsbaum, which was submitted in the parent case 10/156,608. Therefore, Applicants request that the rejection is withdrawn.

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C. Muddiman et al. (1997) 69: 1543-1549 as evidenced by Muddiman et al. (Anal. Chem. (1996) 68:3705-3712) in view of Bergeron (U.S. Patent 6,001,564):

Examiner alleges that claims 1, 2, 8, 9, 14, 17, 29, 31-32, 35-38, 41 and 43 are obvious over Muddiman et al. (1997) 69: 1543-1549 as evidenced by Muddiman et al. (Anal. Chem. (1996) 68:3705-3712) in view of Bergeron (U.S. Patent 6,001,564). Muddiman is relied on as above, and as such does not teach all of the elements of claims 1 or 31. Bergeron is similarly relied on as above. Bergeron does not remedy the defects of Muddiman. Thus, the combination of Muddiman and Bergeron fails to teach all of the elements of the current independent claims 1 and 31 as well as the claims dependent thereon. In addition, Applicants hereby incorporate the enclosed declaration under 37 C.F.R. 1.132, which was submitted in the parent case 10/156,608. Applicants respectfully request that the Examiner withdraw this rejection.

D. Bergeron (U.S. Patent 6,001,564) in view of Koster (WO 98/20166) and further in view of Kohne (U.S. Patent No.: 5,567,587), or of Hurst et al. (Anal. Chem. (1998)70:2693-2698), or of Romick et al (U.S. Patent 6,468,743), or of Vossen et al. (International J. Food Microbiol. (1996) 33:35-49);

or, in the alternative,

Muddiman et al. (1997) 69: 1543-1549 as evidenced by Muddiman et al. (Anal. Chem. (1996) 68:3705-3712) in view of Bergeron (U.S. Patent 6,001,564) and further in view of Kohne (U.S. Patent No.: 5,567,587), or of Hurst et al. (Anal. Chem. (1998)70:2693-2698), or of Romick et al (U.S. Patent 6,468,743), or of Vossen et al. (International J. Food Microbiol. (1996) 33:35-49):

Examiner alleges that claim 3 is obvious over Bergeron (U.S. Patent 6,001,564) in view of Koster (WO 98/20166) and further in view of Kohne (U.S. Patent No.: 5,567,587). In a separate/alternative rejection, Examiner alleges that claim 3 is obvious over Muddiman et al. (1997) 69: 1543-1549 as evidenced by Muddiman et al. (Anal. Chem. (1996) 68:3705-3712) in view of Bergeron (U.S. Patent 6,001,564) and further in view of Kohne (U.S. Patent No.: 5,567,587). Examiner also alleges that claims 4-7 and 33 to 37 are obvious over Bergeron (U.S. Patent 6,001,564) in view of Koster (WO 98/20166) and further in view of Hurst et al. (Anal. Chem. (1998)70:2693-2698). Alternatively, Examiner alleges

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that these claims are obvious over Muddiman *et al.* (1997) 69: 1543-1549 as evidenced by Muddiman *et al.* (Anal. Chem. (1996) 68:3705-3712) in view of Bergeron (U.S. Patent 6,001,564) and further in view of Hurst *et al.* (Anal. Chem. (1998)70:2693-2698). Examiner also alleges that claims 10 and 39 are obvious over Bergeron (U.S. Patent 6,001,564) in view of Koster (WO 98/20166) and further in view of Romick *et al* (U.S. Patent 6,468,743). Alternatively, Examiner alleges that these claims are obvious over Muddiman *et al.* (1997) 69: 1543-1549 as evidenced by Muddiman *et al.* (Anal. Chem. (1996) 68:3705-3712) in view of Bergeron (U.S. Patent 6,001,564) and further in view of Romick *et al* (U.S. Patent 6,468,743). Examiner also alleges that claims 28-30 and 42-44 are obvious over Bergeron (U.S. Patent 6,001,564) in view of Koster (WO 98/20166) and further in view of Vossen *et al.* (International J. Food Microbiol. (1996) 33:35-49). Alternatively, Examiner alleges that these claims are obvious over Muddiman *et al.* (1997) 69: 1543-1549 as evidenced by Muddiman *et al.* (Anal. Chem. (1996) 68:3705-3712) in view of Bergeron (U.S. Patent 6,001,564) and further in view of Vossen *et al.* (International J. Food Microbiol. (1996) 33:35-49).

Claim 3 has been canceled in order to expedite prosecution. Thus, the rejection of claim 3 is rendered moot. Muddiman, Bergeron and Koster are relied on as above. Neither Bergeron nor Koster nor the combination thereof teaches all of the elements of the claims. Similarly, Muddiman, Koster or the combination thereof all fail to teach all of the elements of the claims. Hurst does not remedy these defects, thus Applicants respectfully request removal of the rejection of claim 4-7 and 33 to 37. Romick also does not remedy these defects, thus Applicants respectfully request that the rejection of claims 10 and 39 is removed. And likewise, Vossen does not remedy these defects, thus Applicant is requesting that the rejection of claims 28-30 and 42-44 is removed. In addition, Applicants hereby incorporate the enclosed declaration under 37 C.F.R. 1.132 by Dr. Steven Buchsbaum, which was submitted in the parent case 10/156,608. Applicants respectfully request that the Examiner withdraw these rejections.

III. Double Patenting Rejection:

Claims 1-10, 14, 17 and 28-44 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-28 of co-pending application number 10/660,997 in view of Muddiman teaching the selection of *B*.

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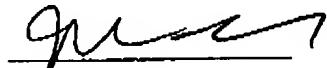
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*anthracis*. Applicants respectfully disagree. Nevertheless, and in order to advance prosecution of this case, Applicants are herein filing a terminal disclaimer.

**Conclusions**

In view of the foregoing, Applicants submit that the claims of the instant application are in condition for allowance. The Examiner is invited to contact Applicants' undersigned representative if there should be any questions with regard to the claimed invention.

Respectfully submitted,



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Date: July 24, 2006

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